Fig. 1

111

max = Number of columns in key;
count=0;
Create normalizedkey;

114

If(count<max)

Yes

119

createmarker(key[count]);
Append marker to normalizedkey;

121

normalize([count]);
Append normalize to NormalizedKey;

125

Count++;

No

128

If(normalizedkey>max_size);

Yes

132

Calculate checksum;
Truncate normalizedkey;
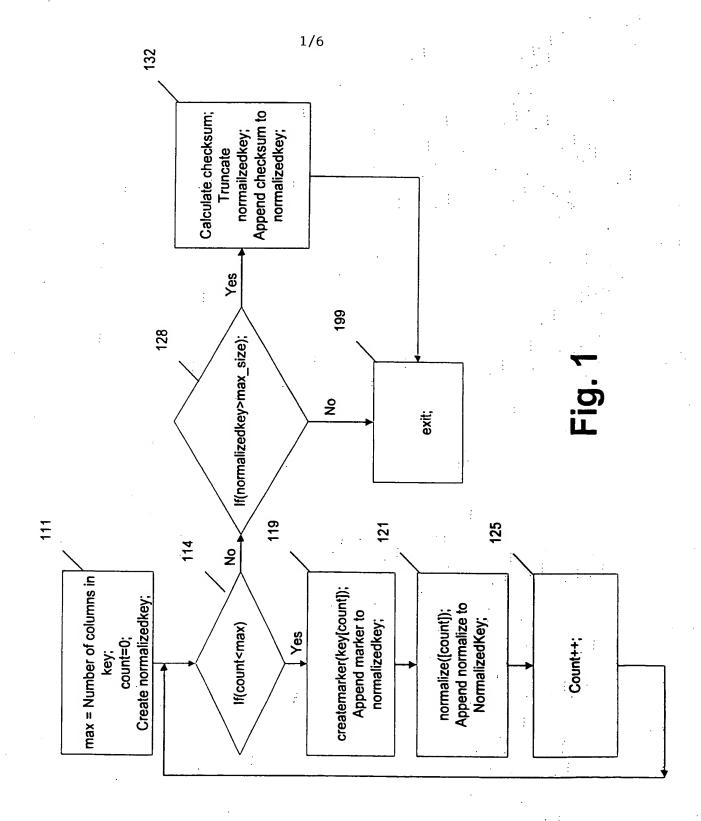Append checksum to normalizedkey;

No

199

exit;

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Attorney: Jonathan M. Waldman
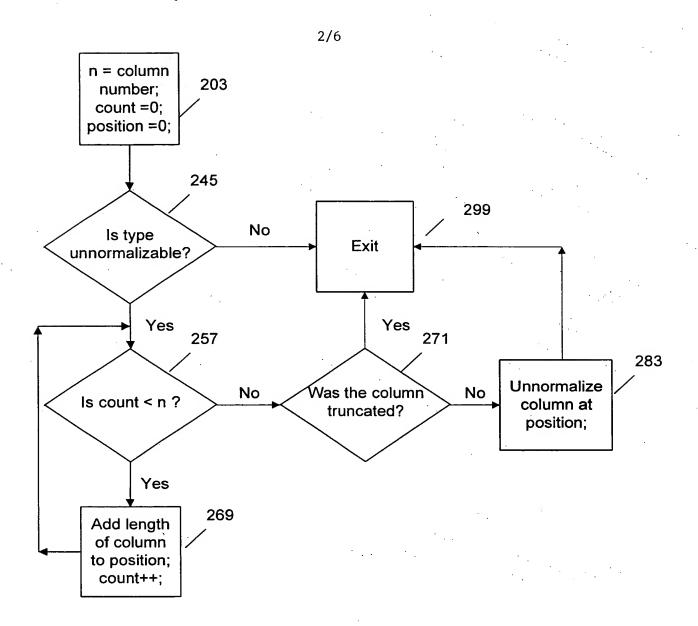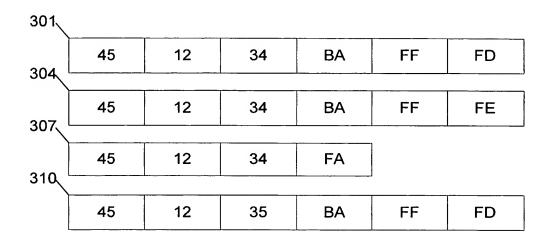Sheet 2 of 6

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```
┌─────────────────┐
│  n = column     │
│    number;      │  ╱ 203
│   count =0;     │
│  position =0;   │
└─────────────────┘
         │
         ▼
       ╱ 245
      ◇ Is type        ──No──►  ┌──────┐   ╱ 299
     ◇ unnormalizable? ◇        │ Exit │◄────────────┐
      ◇               ◇         └──────┘             │
         │                         ▲                 │
        Yes                       Yes                │
         │            257         │   271            │       283
         ▼           ╱            │  ╱               │      ╱
  ┌──────────────┐   ◇ Is count   ─No─► ◇ Was the column ─No─►┌──────────────┐
  │              │   ◇  < n ?  ◇        ◇  truncated?  ◇      │  Unnormalize │
  │              │      │                                     │  column at   │
  │              │     Yes                                    │   position;  │
  │              │      │         269                         └──────────────┘
  │              │      ▼        ╱
  │              │  ┌──────────────┐
  │              │  │ Add length   │
  │              │  │ of column    │
  │              └──│ to position; │
  │                 │   count++;   │
  └─────────────────└──────────────┘
```
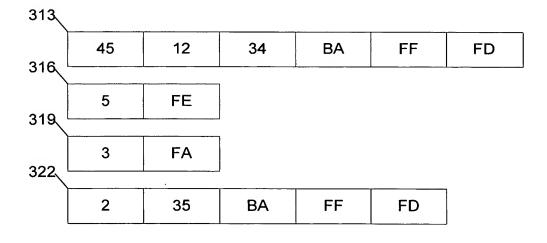
Fig. 2

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301

45	12	34	BA	FF	FD

304

45	12	34	BA	FF	FE

307

45	12	34	FA

310

45	12	35	BA	FF	FD

313

45	12	34	BA	FF	FD

316

5	FE

319

3	FA

322

2	35	BA	FF	FD

Fig. 3

header k1 k2 k3 ... kn Free Space s1 s2 s3 ... sn

411   415   420   425

401

Fig. 4

501

Imminent page
split may trigger
page compression;

503

Int count = 0;
int max = Number
of keys on page;

504

If (count >= max) → Yes → **599** Exit;

No

505

If(key is compressed) → No

Yes

509

Compress key;
Update slot
corresponding to
key;

511

Shift adjacent keys
to fill space;
Update slots to
reflect shifted key
offsets;

515

count++;

Fig. 5

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Inventors: Leonard Ciprian Mosescu .
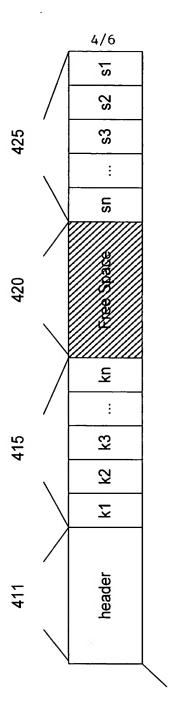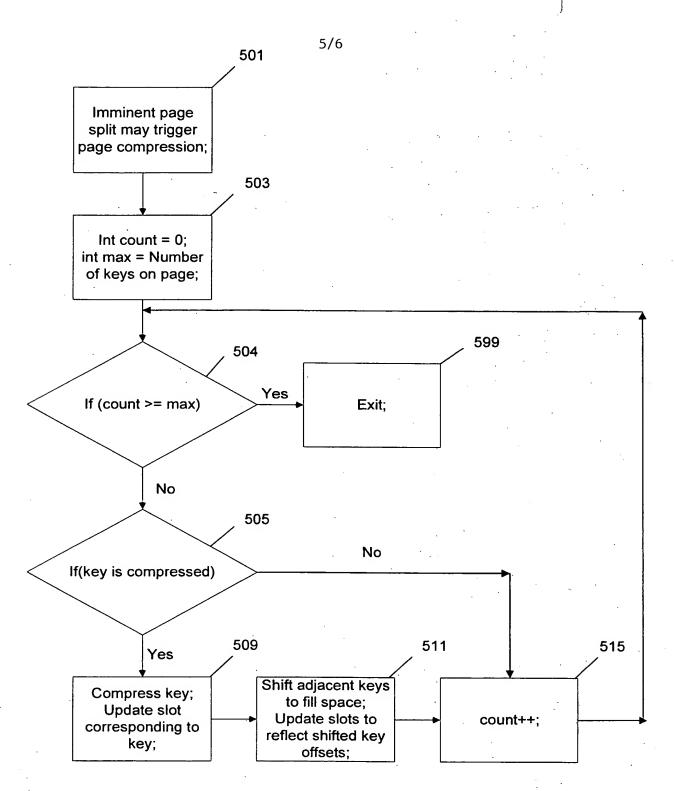Attorney: Jonathan M. Waldman
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Fig. 6